AKO (GB) D142H23MT2 Ed.01

CE Installation instructions

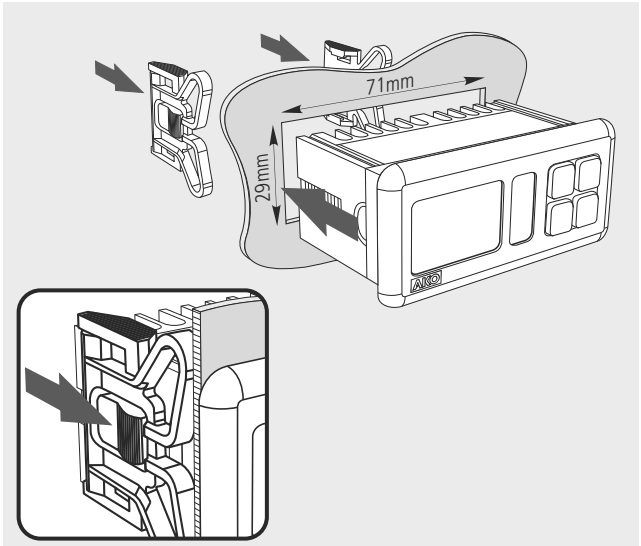
AKO-D14223MT
AKO-D14220MT

Warnings

-Using the equipment without following the manufacturer's instructions may affect the device's safety requirements. To ensure that the device operates correctly, only probes supplied by AKO should be used.
-The unit must be installed in a location protected from vibrations, water and corrosive gases, where the ambient temperature does not exceed that shown in the technical data.
-To ensure a correct reading, the probe must be situated in a location without any external heat influences except for the temperature which is being measured or controlled.
-The power supply circuit must be provided with a main switch rated at at least 2 A, 230 V, located close to the equipment. The cables will enter through the back and should be type H05VV-F or H05V-K.
-The gauge will depend on local regulations, but should in no case be less than 1 mm^2.
-Connecting wires for the relay contacts should be sized 2.5 mm^2.
-Between -40 °C and +20 °C, if the probe NTC is prolonged till 1.000 m with a mínimum of cable 0,5 mm^2, the maximum deviation will be of 0,25 °C (extension cable for probe ref. **AKO-15586**)

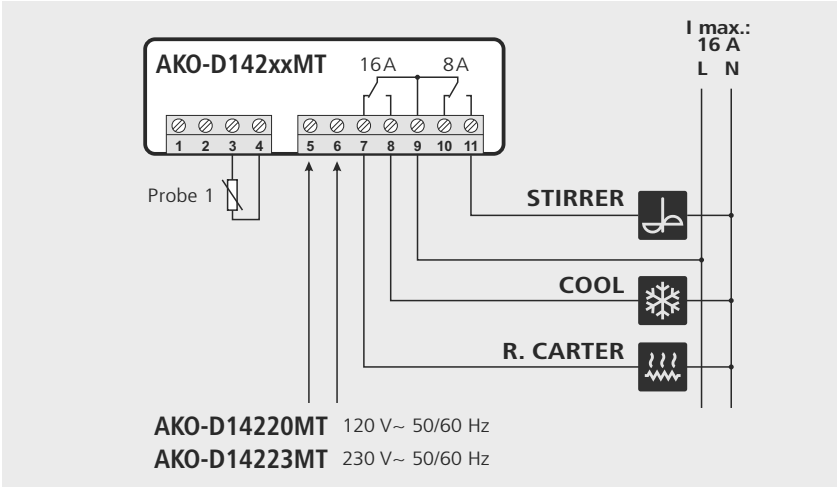
NOTE: Equipment not compatible with AKO-14917 (external communication module) and AKO-14918 (programming key)

Installation

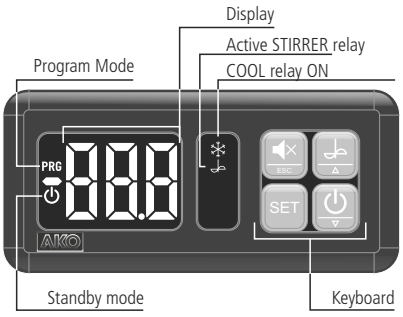


Wiring

The probe and its cable should **NEVER** be installed in the same conduit as power, control or supply cables.



Operation



ESC key / 🔇

Pressing once silences the alarm tone.
In the programming menu, exit without saving parameter, return to previous level or exit programming.

SET key

Press for 5 seconds to modify the set point (SP).
Press for 10 seconds to go to the programming menu.
In the programming menu, go to the level displayed or accept the new value while setting a parameter.

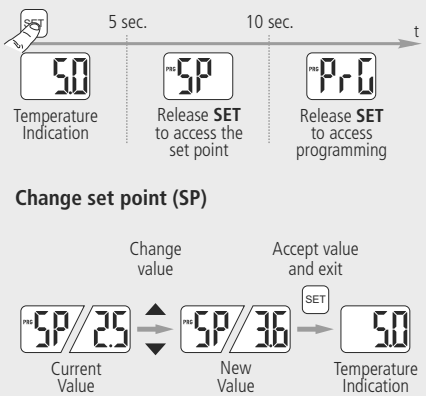
Up key ▲ / 🜂

Pressing for 2 seconds activates or deactivates the stirrer's manual mode. (See parameters d3 and d4)
The programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.

Down key ▼ / ⏻

Pressing for 5 seconds activates Standby mode, pressing for 2 seconds returns the equipment to normal mode. In Standby mode, the equipment performs no actions and only the ⏻ indicator is displayed on the screen.
The programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.

Access to set point and programming



Change set point (SP)

Programming Menu (parameters)

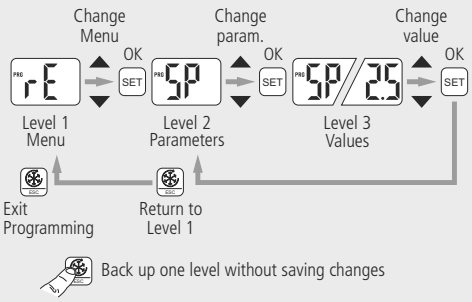


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Table of parameters and messages

Def. column shows factory-set default parameters. If not indicated otherwise, the temperature values are in °C. (Equivalent velues in °F)

Level 1 / Level 2

CONTROL

		Description		Values	Min.	Def.	Max.
rE	SP	Temperature Adjustment (Set Point) (limits depending on probe type)	With NTC	(°C / °F)	-50.0	4.0	99.0
			With PTC			-	150
	C0	Calibrating probe 1 (Offset)		(°C / °F)	-20.0	0.0	20.0
	C1	Probe 1 differential (Histeresis)		(°C / °F)	0.1	2.0	20.0
	C2	Upper blocking of the set point (cannot be set above this value)	With NTC	(°C / °F)	C3	99.0	99.0
			With PTC			-	150
	C3	Lower blocking of the set point (cannot be set below this value)		(°C / °F)	-50.0	-50.0	C2
	C5	Compressor turn-on delay time since last stop		(min.)	0	0	120
	C7	Time compressor is ON if probe 1 fails (If C7=0 and C8≠0, the relay will always be OFF deenergised)		(min.)	0	10	120
	C8	Time compressor is OFF if probe 1 fails (If C8=0 and C7≠0, the relay will always be ON energised)		(min.)	0	5	120
	EP	Exit to Level 1					

STIRRER control

		Description	Values	Min.	Def.	Max.
Str	d0	Stirrer regulation type: **0**=Activation equal to compressor; **1**=Activation defined by d1 and d2		0	0	1
	d1	Time stirrer is ON	(min.)	0	5	255
	d2	Time stirrer is OFF	(min.)	0	5	255
	d3	Time stirrer is ON in manual mode	(min.)	1	5	255
	d4	Time stirrer is OFF in manual mode	(min.)	1	5	255
	EP	Exit to Level 1				

ALARMS control

		Description		Values	Min.	Def.	Max.
AL	A0	Configuration of temperature alarms: **0**=Relative to SP; **1**=Absolute			0	0	1
	A1	Maximum alarm probe 1 (must be greater than SP)	With NTC	(°C / °F)	A2	50	99.0
			With PTC			-	150

Nivel 1 / Nivel 2

ALARMS control

		Description	Values	Min.	Def.	Max.
AL	A2	Minimum alarm probe 1 (must be less than SP)	(°C / °F)	-50.0	0	A1
	A3	Temperature alarm delay during start-up	(min.)	0	0	120
	A5	Temperature alarm delay after reaching the value of A1 or A2	(min.)	0	0	99
	A10	Temperature Alarm Differential (A1 and A2)	(°C / °F)	0.1	1.0	20
	EP	Exit to Level 1				

GENERAL STATUS

		Description	Values	Min.	Def.	Max.
CnF	P1	Delay of all functions on receiving electrical power	(min.)	0	0	255
	P2	Access code (password) functions **0**=Inactive; **1**=Block access to parameters; **2**=Keyboard lock		0	0	2
	P7	Temperature display mode **0**=Whole in °C **1**=One decimal in °C **2**=Whole in °F **3**=One decimal in °F		0	1	3
	P9	Selection of probe type **0**=NTC; **1**=PTC		0	0	1
	EP	Exit to Level 1				

ACCESS AND INFORMATION CONTROL

		Description	Values	Min.	Def.	Max.
tid	L5	Access code (Password)		0	-	99
	PU	Program version (Information)			-	
	Pr	Program revision (Information)			-	
	EP	Exit to Level 1				
EP	Exit Programming					

MESSAGES

L5	Access code (Password) request
E1	Probe 1 faulty (open circuit, crossover, **NTC**: temp. >99°C or <-50 °C **PTC**: temp. >150 °C or <50 °C) - (equivalent limits in °F)
AH	**Flashing:** maximum temperature alarm on probe 1 (A1)
AL	**Flashing:** minimum temperature alarm on probe 1 (A2)

Technical specifications

Power supply **AKO-D14220MT** . . . . . 120 V~ +8% -12% 50/60 Hz 4 VA
AKO-D14223MT . . . . . 230 V~ ±10% 50/60 Hz 3.75 VA
Maximum Voltage SELV circuits . . . . . 20 V
Inputs . . . . . 1 input NTC/PTC
Relay COOL 16 A . . . . . (EN60730-1: 12(9) A 250 V~)
Relay STIRRER 8 A . . . . . (EN60730-1: 8(4) A 250 V~)
Number of relay operations . . . . . EN60730-1: 100.000 operations
Types of probe . . . . . NTC **AKO-149xx** / PTC **AKO-1558xx**
Measurement range NTC . . . . . -50,0 °C to +99,9 °C (-58,0 °F to 211 °F)
PTC . . . . . -50,0 °C to +150 °C (-58,0 °F to 302 °F)
Resolution . . . . . 0,1 °C
Working environment . . . . . -
10 to 50 °C, humidity <90 %
Ambient storage humidity . . . . . -30 to 70 °C, humidity <90 %
Class of protection - front panell. IP65
Fixation . . . . . Panel-mounted with anchors
Panel cutout dimensions . . . . . 71 x 29 mm
Front panel dimensions . . . . . 79 x 38 mm
Depth . . . . . 61 mm
Connections . . . . . Screw terminals for cables up to 2.5 mm²
Rating of control device: built-in, automatic operation feature Type 1.B, for use in clean environments, Class A software and continuous operation. Pollution classification 2 s/ UNE-EN 60730-1.
Double insulation between supply, secondary circuit and relay output.
Rated pulse voltage . . . . . 2500 V
Temperature during ball-pressure test
Accessible parts . . . . . 75 °C
Parts which position active elements . . . . . 125 °C
Voltage and current as per EMC tests
AKO-D14223MT . . . . . 207 V, 17 mA
AKO-D14220MT . . . . . 105 V, 36 mA
Current of radio jamming supression tests . . . . . 270 mA